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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,632	12/01/2004	Hideaki Oshima	NSG-242US	4571
23122	7590	06/28/2006	EXAMINER	
RATNERPRESTIA			DUONG, DIEU HIEN	
P O BOX 980			ART UNIT	
VALLEY FORGE, PA 19482-0980			PAPER NUMBER	
			2821	

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/516,632

Applicant(s)

OSHIMA ET AL.

Examiner

Dieu Hien T. Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/01/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 10/516,632.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/01/04, 01/28/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawahata et al. (US 6,140,968).

Regarding claim 1, Figure 8 of Kawahata shows a planar antenna, comprising a dielectric substrate 11; an almost square radiating element 13 formed on one main surface of said dielectric substrate, said radiating element 13 having notched portions at two corners 13a opposing in one diagonal direction; and a ground conductor 47 formed on said one main surface 11, said ground conductor 47 having a square opening portion at a center portion thereof and a square outer peripheral shape; wherein said radiating element 13 is placed inside the opening portion of said ground conductor 47 with a gap 11 of a predetermined width being provided with respect to said ground conductor.

Regarding claim 3, as applied to claim 1, Figure 8 of Kawahata shows that said planar antenna receives a circularly polarized wave of a microwave band.

Regarding claim 4, Figure 8 of Kawahata would enable the steps of a method for designing a planar antenna of claim 1, wherein a diagonal line length in the other diagonal direction where no notched portions of said radiating element are provided is

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deemed as A, the diagonal line length in said one diagonal direction as B, a width of said gap between said radiating element and said ground conductor as G, and a length of one edge of the square peripheral shape of said ground conductor as W, said method comprising the steps of deciding said diagonal line length A so that the planar antenna resonates with a predetermined frequency, deciding said diagonal line length B base on a first linear function relationship between a resonance frequency of the planar antenna and a diagonal line length ratio B/A , deciding said gap width G based on a second linear function relationship between said diagonal line length ratio B/A and a ratio G/A of said A to said G, and deciding said length W of one edge of the square peripheral shape based on an exponential function relationship between a gradient coefficient of a linear expression representing said second linear function relationship and a ratio W/A of said A to said W.

Claim 6 rejected for reciting similar subject matter to claim 3.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawahata et al. (US 6,140,968) in view of Langley et al. (US 6,480,170 B1).

Regarding claim 2, as applied to claim 1, Kawahata discloses every feature of claimed invention except for said dielectric substrate being a window glass of a vehicle, and said radiating element and ground conductor are formed on an inner surface of said window glass. However, Langley (col.5, lines 24-29) discloses a planar antenna comprising a radiating element and ground conductor formed on an inner surface of a window glass. It would have been obvious to one ordinary skill in the art at the time the invention was made to form Kawahata antenna on an inner surface of said window glass of vehicle, as taught by Langley, doing so would enable the Kawahata antenna to replace conventional upright rod antenna for mobile telephone communications or for receiving broadcast signals.

Claim 5 is rejected for reciting similar subject matter to claim 2.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Watson et al. (US 6,198,437 B1) is cited to teach broadband patch/slot antenna adapted to use in vehicles.

Gibson (US 4,873,529) is cited to teach coplanar patch antenna.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu Hien T. Duong whose telephone number is 571-272-8980. The examiner can normally be reached on Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner

Dieu Hien Duong

A handwritten signature in black ink, appearing to read 'Hoang V. Nguyen', with a long horizontal flourish extending to the right.

**HOANG V. NGUYEN
PRIMARY EXAMINER**